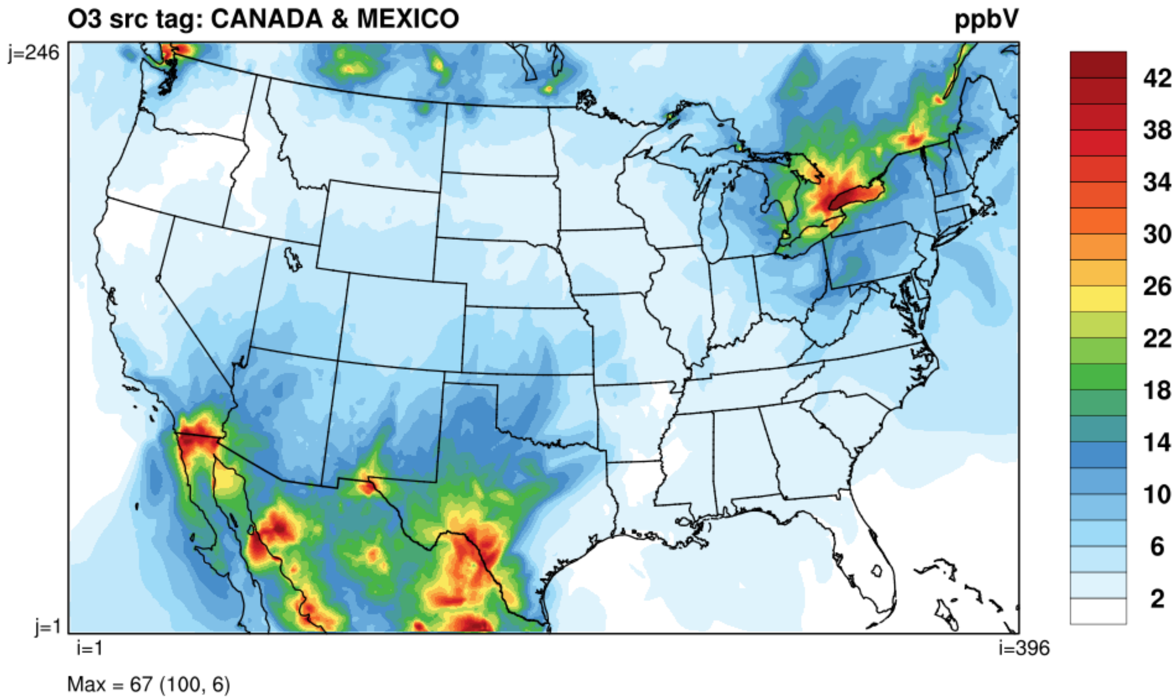

Figure 33. Ozone season maximum CAMx APCA O_3 tracers – Canada and Mexico

Table 9. MDA8 O_3 (ppbV) DV_{2023} (with WATER) inventory sector linkages to monitors in the LADCO 2023 simulation

County & AIRS ID	Suffolk Co. 361030002	Fairfield Co. 90019003	Harford Co. 240251001	Sheboygan Co. 551170006	Richmond Co. 360850067	New Haven Co. 90093002	Fairfield Co. 90013007	Wayne Co. 261630019	Queens Co. 360810124	Fairfield Co. 90010017	Allegan Co. 260050003	Milwaukee Co. 550790085
STATE	**NY**	**CT**	**MD**	**WI**	**NY**	**CT**	**CT**	**MI**	**NY**	**CT**	**MI**	**WI**
2015-2017 DV	76.0	83.0	75.0	80.0	76.0	82.0	83.0	73.0	74.0	79.0	73.0	71.0
2009-2013 AVRG	83.3	83.7	90.0	84.3	81.3	85.7	84.3	78.7	78.0	80.3	82.7	78.3
2009-2013 MAX	85.0	87.0	93.0	87.0	83.0	89.0	89.0	81.0	80.0	83.0	86.0	82.0
2023 AVRG	71.6	71.4	71.0	70.5	70.9	69.9	69.8	68.3	69.2	68.9	68.8	63.6
2023 MAX	**73.1**	**74.2**	**73.3**	**72.8**	**72.4**	**72.6**	**73.7**	70.3	**71.0**	**71.2**	**71.5**	66.6
Comm Marine	3.0	4.0	4.0	1.0	2.9	5.9	4.0	0.5	3.0	2.8	0.7	0.7
Fire	0.3	0.3	0.4	0.7	0.4	0.2	0.3	0.4	0.2	0.2	0.9	0.3
Oil & Gas	2.4	2.4	3.4	2.8	3.2	1.8	2.5	2.4	2.4	1.7	2.9	2.0
Agriculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ag Fire	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1
Rail	1.3	1.4	1.9	2.2	1.6	1.4	1.4	1.7	1.4	1.1	2.7	1.7
RWC	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Onroad	12.6	12.9	12.4	9.8	12.1	11.7	12.2	10.1	11.1	12.9	10.9	9.1
Nonroad	10.2	10.4	9.3	10.3	8.8	11.1	9.7	7.5	9.5	13.6	10.0	11.9
Nonpoint	6.4	6.2	3.6	5.6	4.7	4.7	6.1	3.7	5.9	6.6	3.9	5.4
EGU Point	5.8	6.3	8.9	6.0	8.1	5.1	6.1	5.2	6.1	4.1	6.3	4.2

Non-EGU Point	5.0	4.9	5.3	7.3	5.5	4.5	4.7	6.6	5.3	3.8	8.8	6.2
Canada/Mex	1.8	1.4	0.8	0.8	1.6	1.7	1.4	3.1	1.7	1.6	0.6	0.8
ICBC	18.6	17.1	15.5	16.6	16.9	17.8	17.4	20.1	18.0	17.1	12.1	15.1
Biogenic	4.2	4.0	5.3	7.2	5.1	4.0	4.0	6.8	4.4	3.3	8.7	5.9

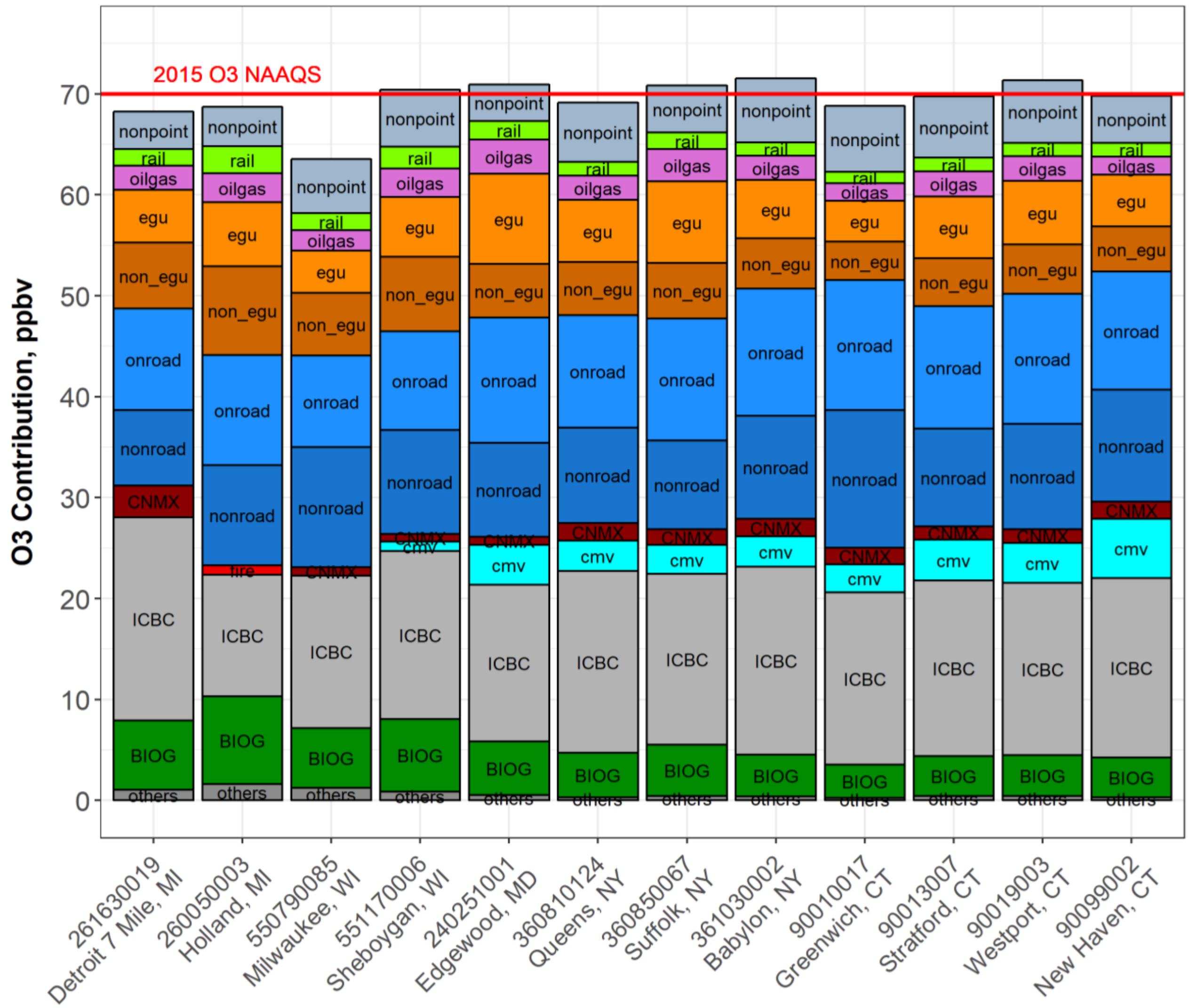

Figure 34. MDA8 O_3 (ppbV) (with WATER) inventory sector contributions to DVs_{2023} at key monitors in the LADCO 2023 simulation

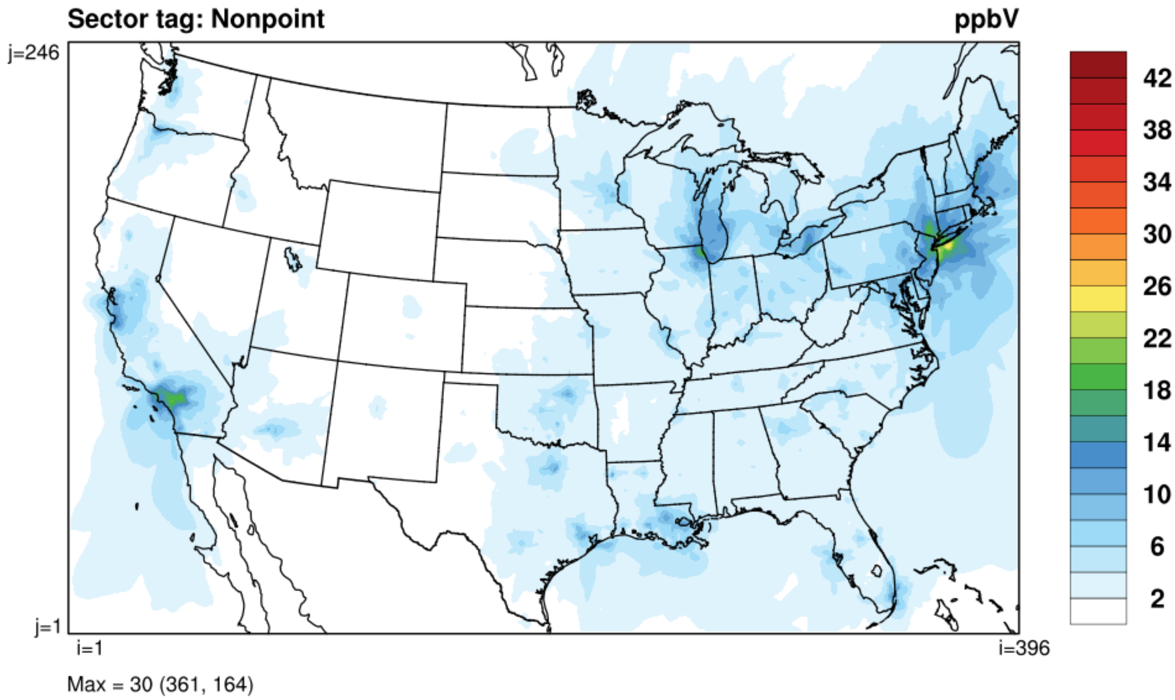

Figure 35. Ozone season maximum CAMx APCA O_3 tracers – Area/Nonpoint

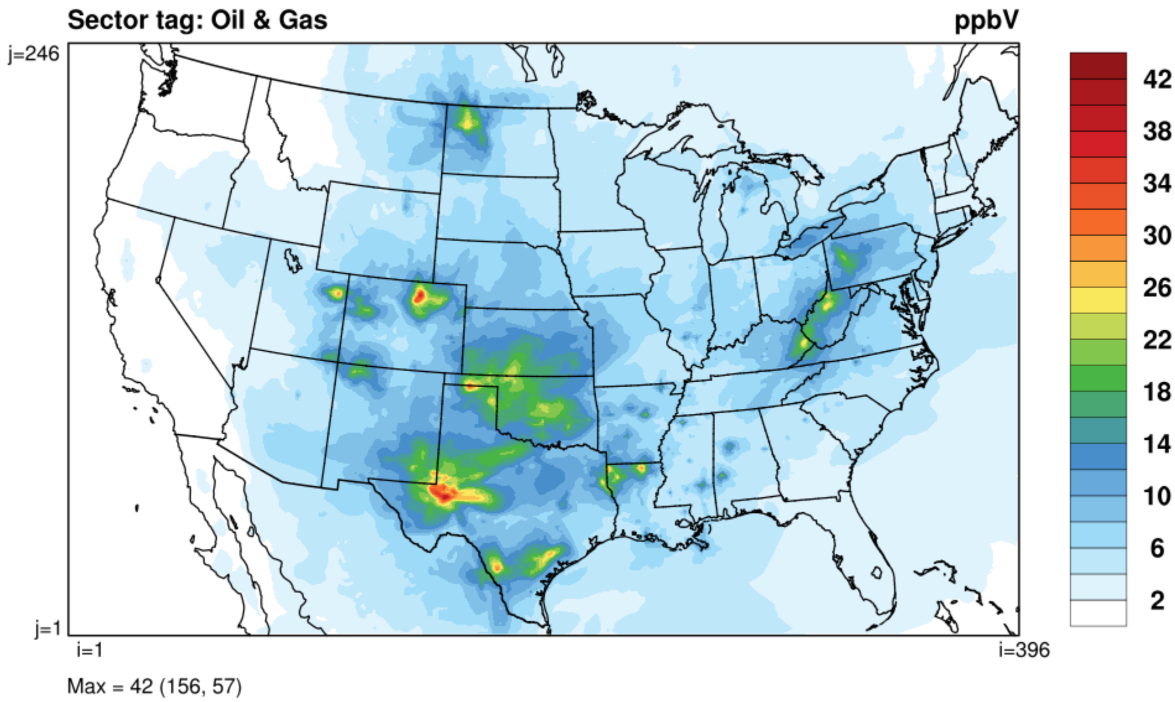

Figure 36. Ozone season maximum CAMx APCA O_3 tracers – Oil and Gas

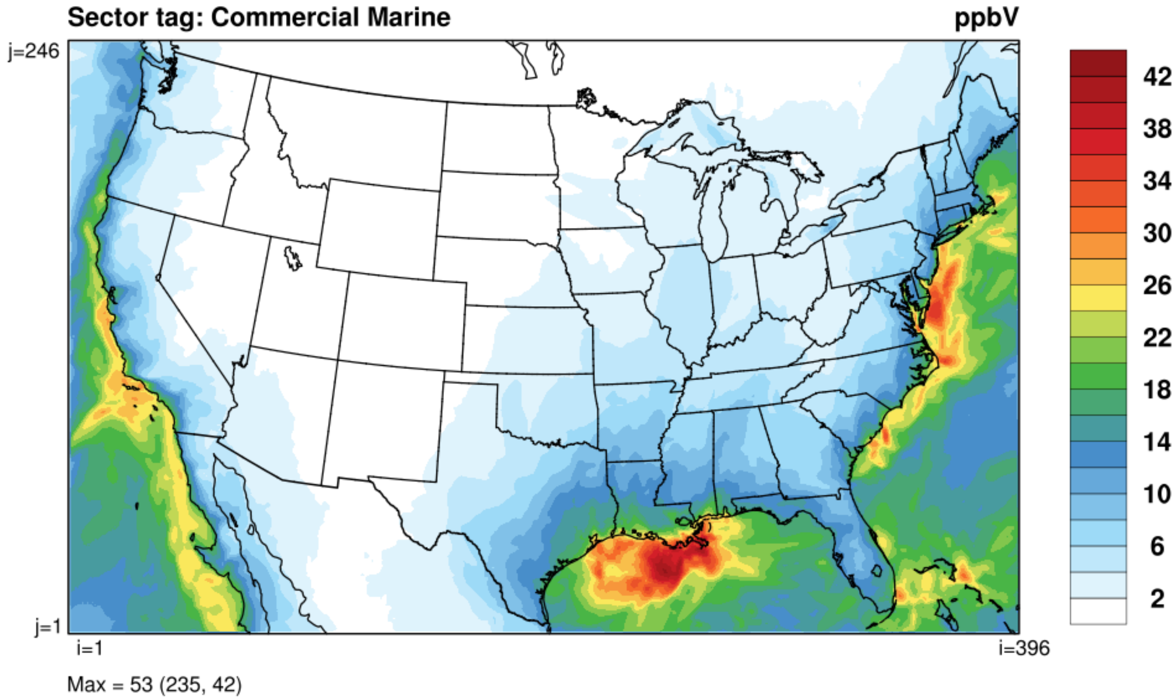

Figure 37. Ozone season maximum CAMx APCA O_3 tracers – Commercial Marine Vessels

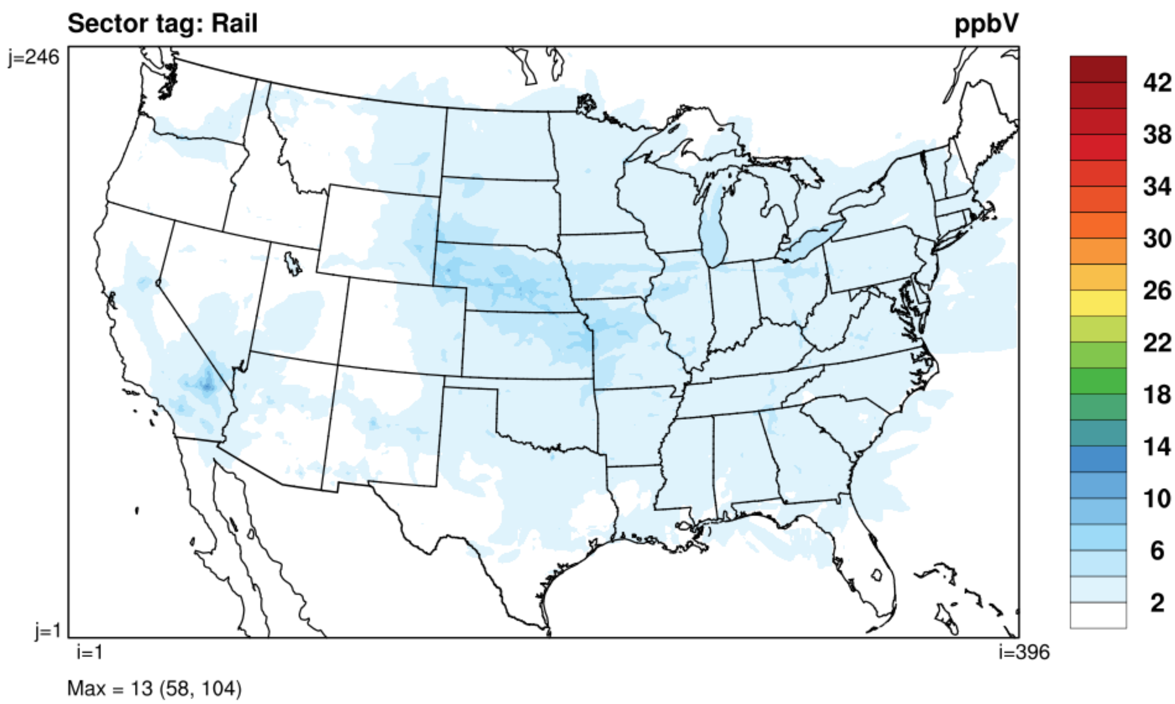

Figure 38. Ozone season maximum CAMx APCA O_3 tracers – Rail

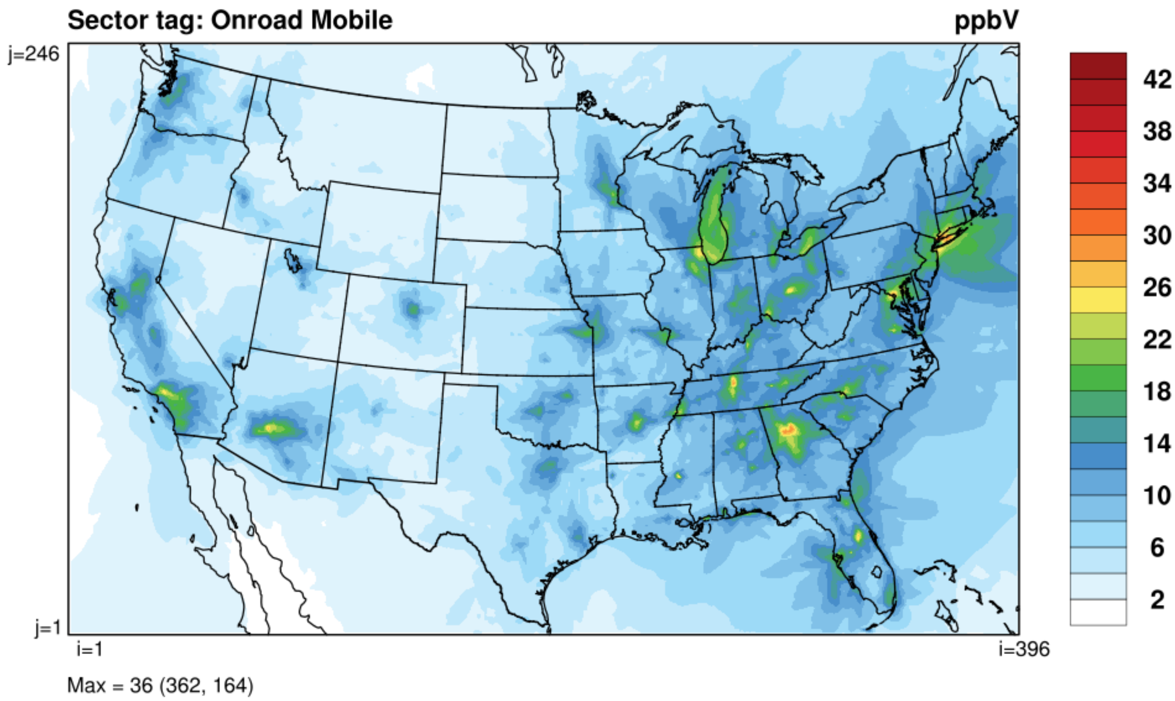

Figure 39. Ozone season maximum CAMx APCA O_3 tracers – Onroad Mobile

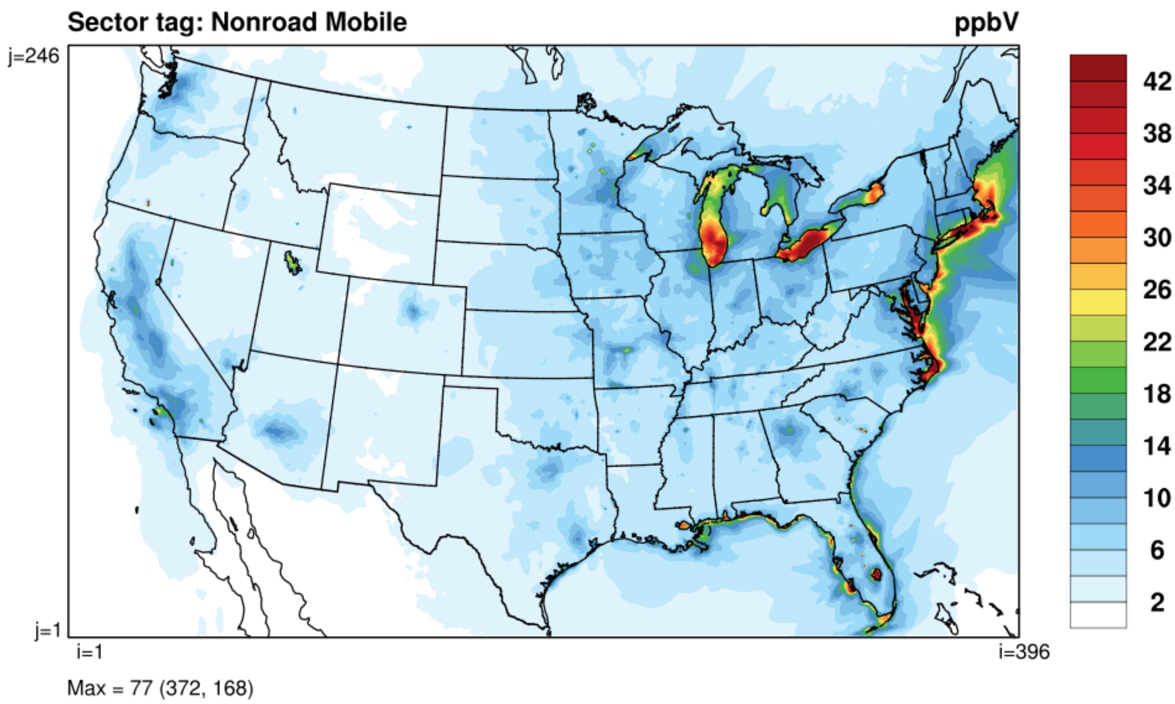

Figure 40. Ozone season maximum CAMx APCA O_3 tracers – Nonroad Mobile

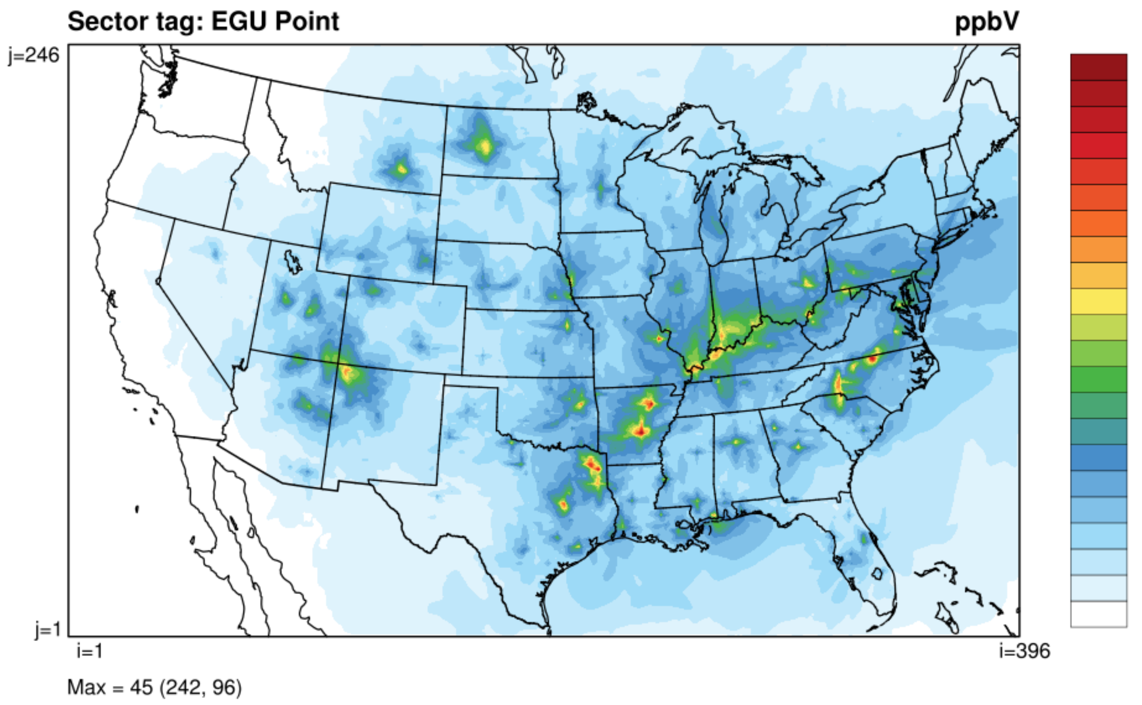

Figure 41. Ozone season maximum CAMx APCA O_3 tracers – EGU Point

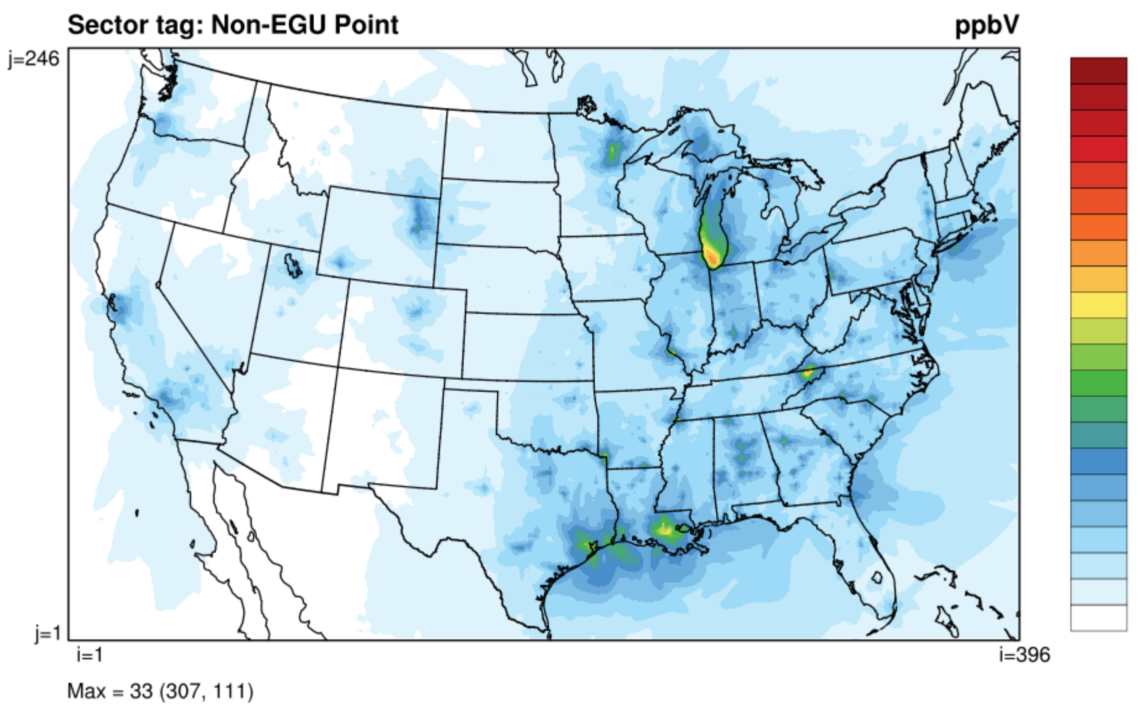

Figure 42. Ozone season maximum CAMx APCA O_3 tracers – Non-EGU Point

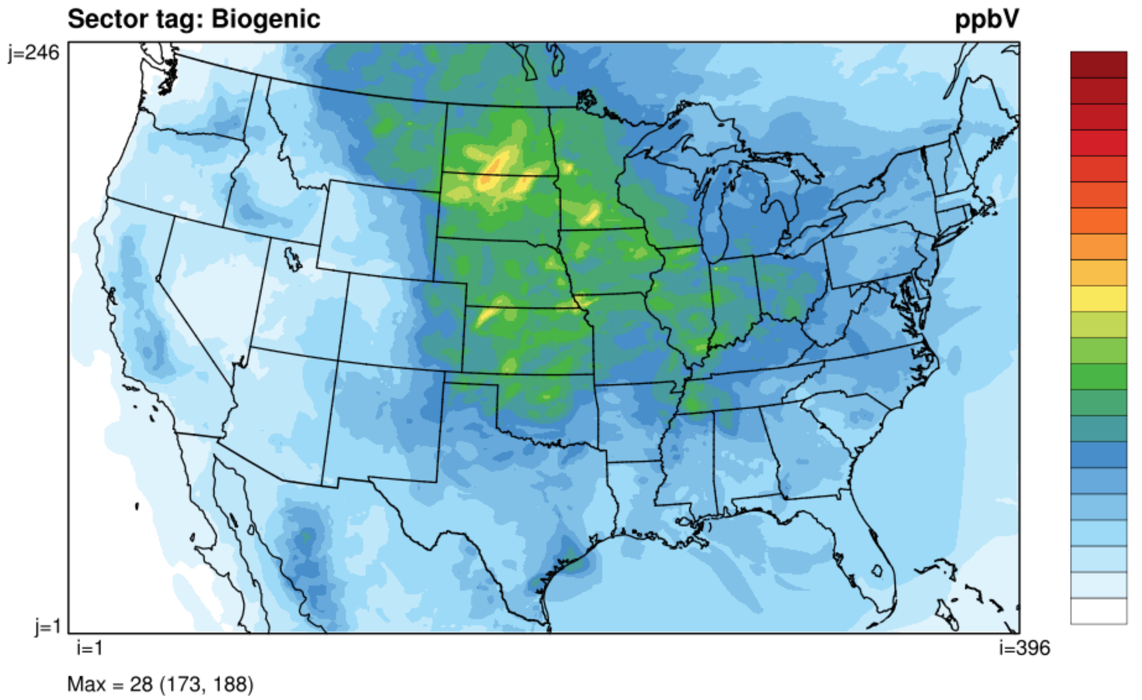

Figure 43. Ozone season maximum CAMx APCA O_3 tracers – Biogenic

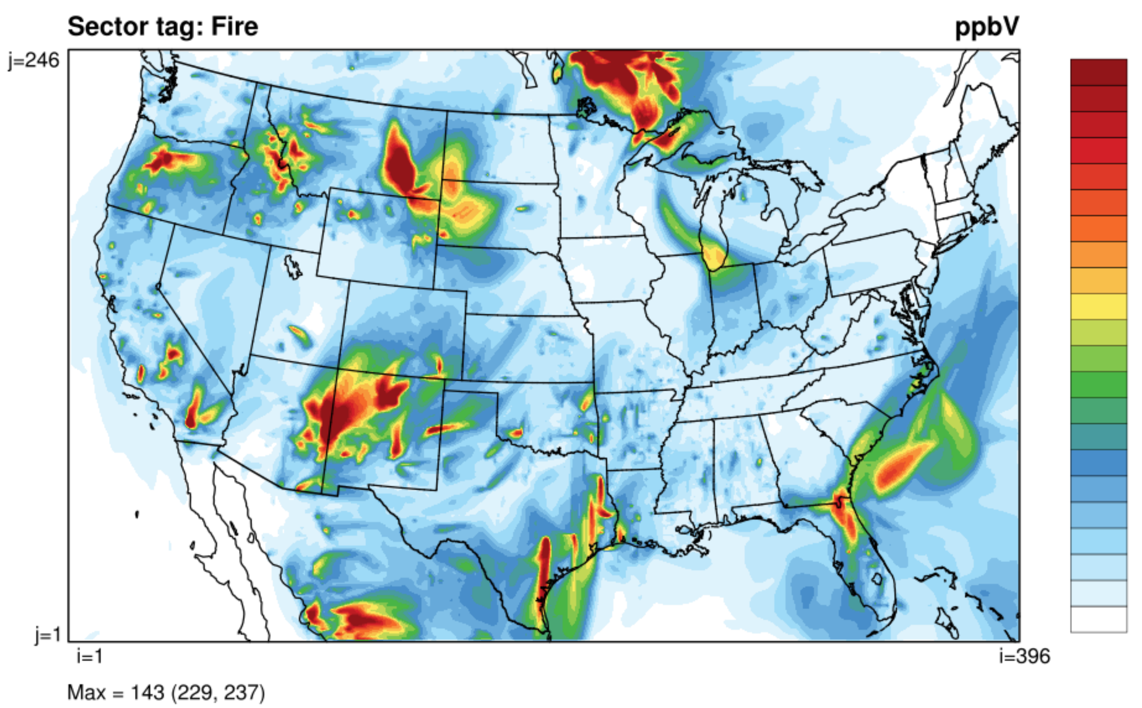

Figure 44. Ozone season maximum CAMx APCA O_3 tracers – Fires

5.5 Interstate Transport Assessment Flexibilities

In March 2018 U.S. EPA released a memo (US EPA, 2018) that described a series of flexibilities that states could consider in developing Good Neighbor SIPs for the 2015 O_3 NAAQS. In this section LADCO presents a series of alternatives for calculating DVs_{2023}. We compare the results against the standard U.S. EPA attainment test configuration (top 10 modeled days, 3x3 cell matrix around the monitor, including water cells) to demonstrate how the air quality projections and conclusions may change with each approach.

5.5.1 Alternative Power Sector Modeling

The “[u]se of alternative power sector modeling consistent with EPA’s emissions inventory guidance” is presented in the Analytics section of EPA’s March 2018 memo as a flexibility to consider in preparing a Good Neighbor SIP. This flexibility supports LADCO’s use of the ERTAC EGU model for projecting EGU emissions to 2023. As described in Section 2.5.1, we consider the emissions projections from ERTAC EGU to be more representative of the sources in the Midwest and Northeast than the approach used by U.S. EPA in their 2023 EN modeling platform. As ERTAC EGU is developed in collaboration between regional and state air planning agencies, it includes algorithms and data that have been reviewed by many of the states impacted by interstate O_3 transport in the Midwest and Eastern U.S.

The LADCO 2023 CAMx simulation relative to the U.S. EPA 2023 EN simulation is an example of an alternative power sector modeling flexibility. The only configuration difference between these simulations is in the EGU emissions used with CAMx to project future year air quality. This sensitivity is slightly confounded by differences in the U.S. EPA and LADCO computing platforms when directly comparing the runs. The computing system porting differences between the two runs is relatively small (see Section 5.1) compared to the differences introduced by changing the EGU emissions.

Figure 17 and Figure 18 illustrate the differences in 2023 MDA8 O_3 that result from changing the EGU projection methodology. As described in Section 5.2, the U.S. EPA simulation predicts higher O_3 in the Midwest, Northeast, Gulf Coast, and Pacific Coast states; the LADCO simulation predicts higher O_3 in the Four Corners region and Central

Arkansas. Figure 45 and Figure 46 compare summer season MDA8 O_3 between the LADCO and U.S. EPA 2023 simulations for monitors in the AQS and CASTNET networks, respectively. On average across all days and all sites, the LADCO simulation (y-axis) predicts slightly lower MDA8 O_3 concentrations than the EPA simulation (AQS NMB[4] = -0.13%, CASTNET NMB = -0.01%).

Figure 47 through Figure 49 compare the U.S. EPA and LADCO DVs_{2023} for the Eastern U.S. and the LADCO region, respectively. Table 10 shows the DVs_{2023} and $DVs_{2009\text{-}2013}$ for the persistent nonattainment and maintenance monitors in the Eastern U.S. ***The LADCO simulation that used ERTAC EGU emissions projections forecasted lower*** **DVs_{2023}** ***than the U.S. EPA 2023 EN simulation. Where six monitors were projected nonattainment monitors in the U.S. EPA simulation, the LADCO simulation predicted three to be in nonattainment.*** The RRF plots in Figure 50 further show the regional O_3 reductions in the LADCO simulation relative to the U.S. EPA 2023 EN simulation. More yellow and blue colors, representing lower RRFs or greater reductions in future year O_3, are seen in the LADCO simulation through Mid-Atlantic and Northeast regions.

The differences between the LADCO and U.S. EPA 2023 O_3 forecasts are the result of differences in the EGU NOx emissions used for the two simulations. These differences produce both higher and lower O_3 in the LADCO 2023 simulation relative to U.S. EPA, depending on where the emissions changes occur and on the O_3 formation regime (i.e., NOx or VOC-limited conditions) impacted by the emissions.

[4] NMB = Normalized Mean Bias, measure of the overall difference between the modeled and observed concentrations at grid cells that contain monitoring sites

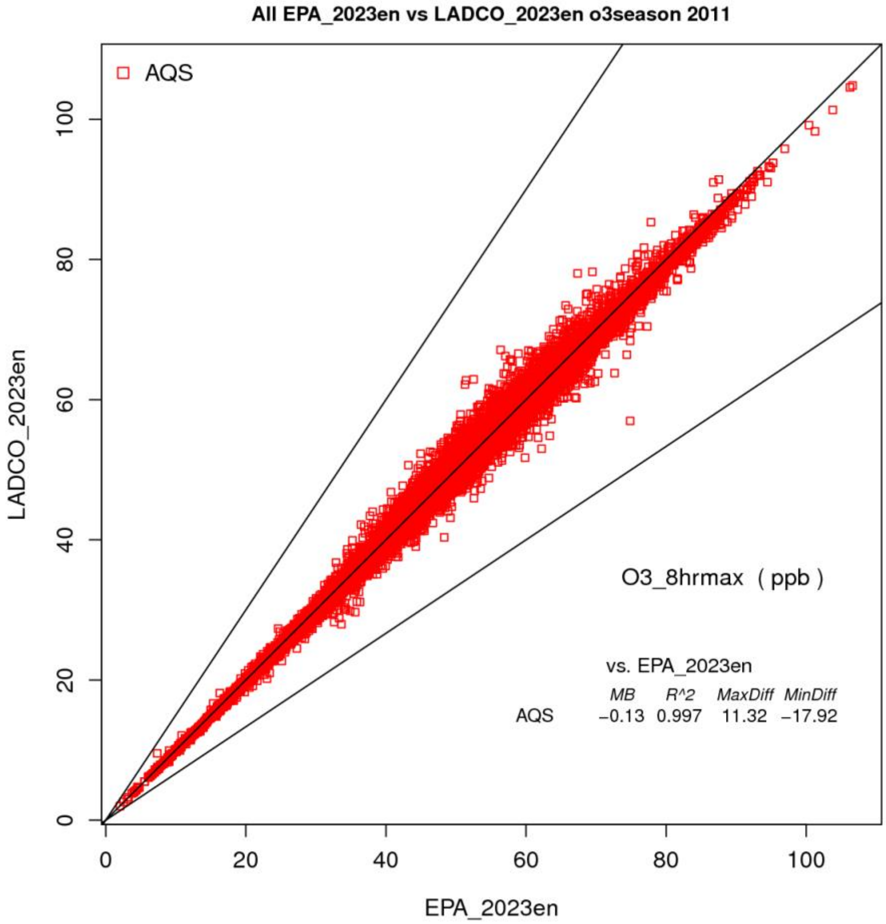

Figure 45. LADCO 2023 vs EPA 2023 summer season AQS MDA8 O_3

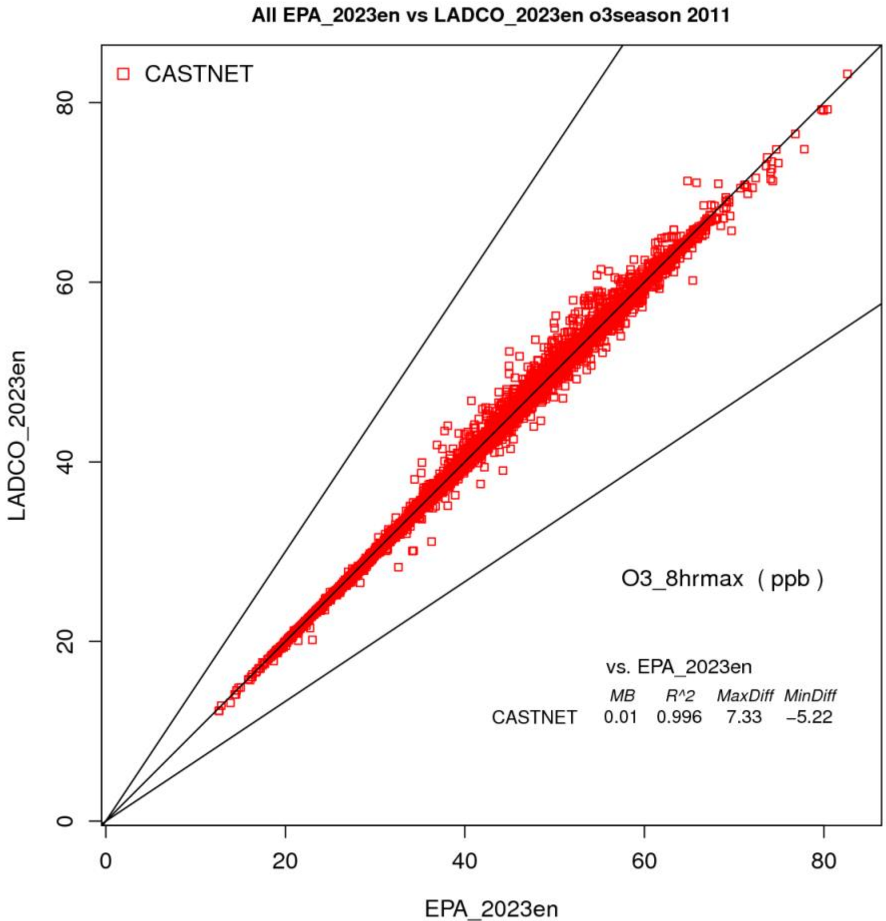

Figure 46. LADCO 2023 vs EPA 2023 summer season CASTNET MDA8 O_3

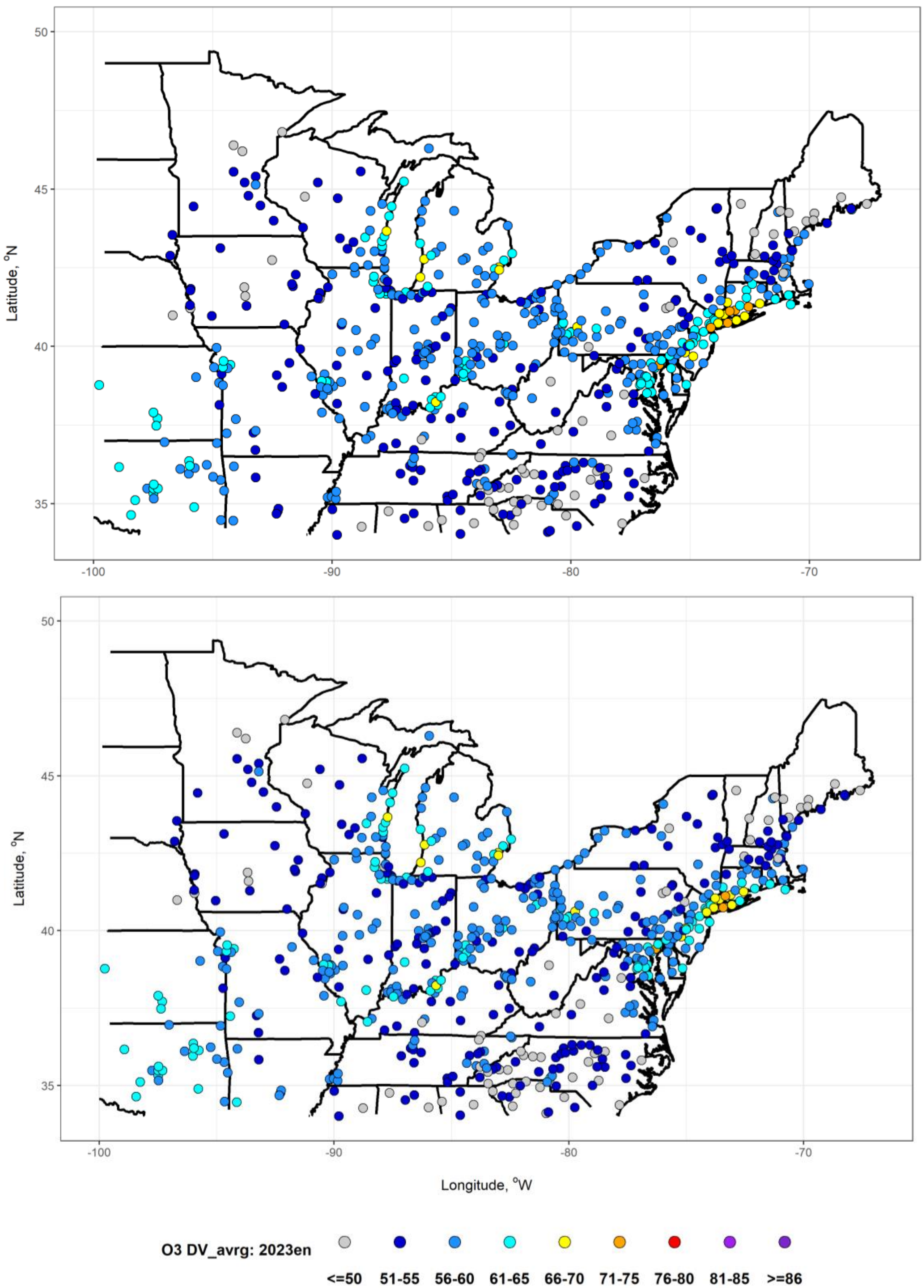

Figure 47. EPA (top) and LADCO (bottom) 2023 DVs2023.

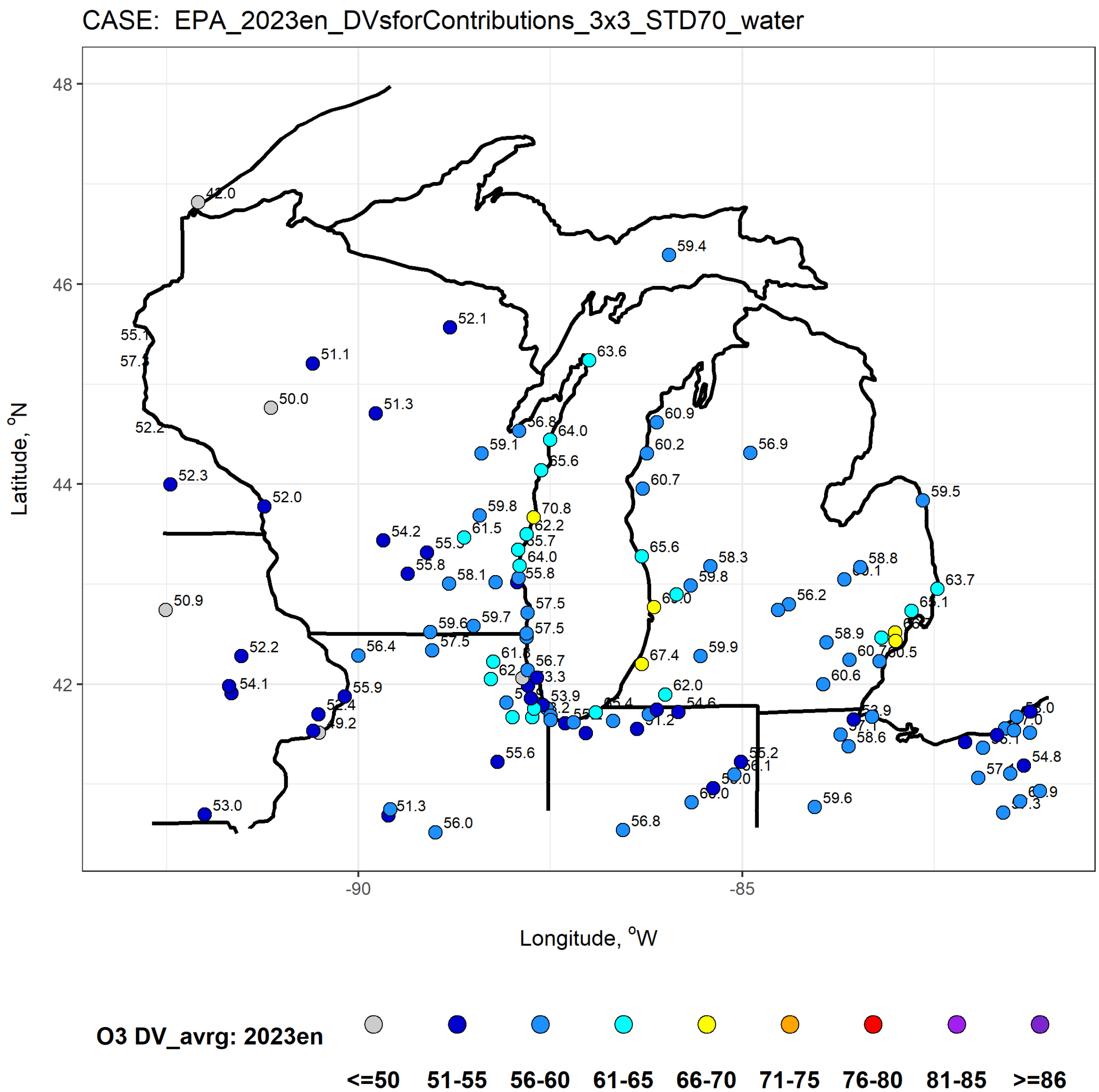

Figure 48. EPA 2023 DVs2023; LADCO region zoom.

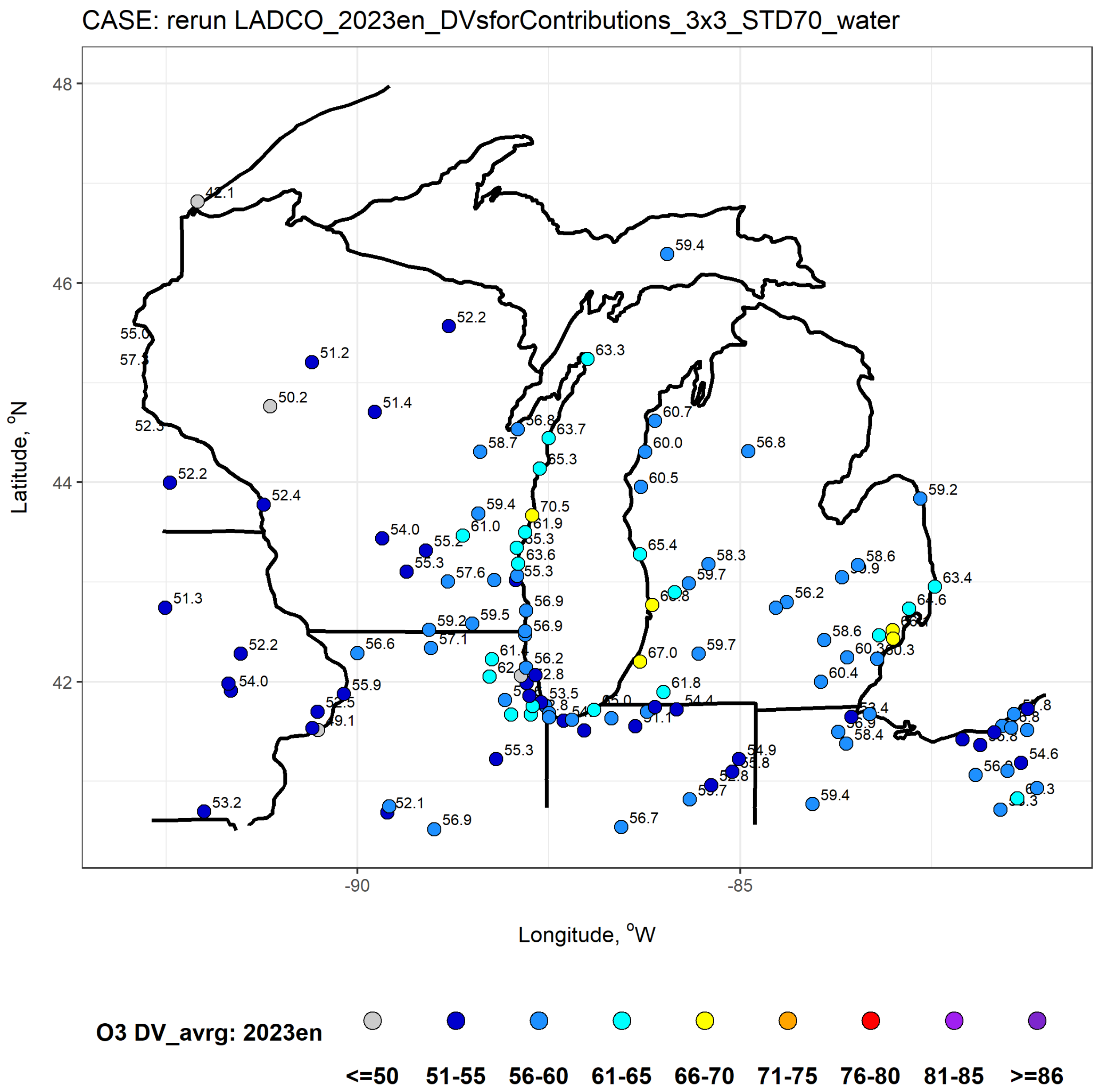

Figure 49. LADCO 2023 DVs2023; region LADCO zoom.

Table 10. LADCO and EPA 2023 O_3 design values (with WATER) at nonattainment and maintenance monitors in the Midwest and Northeast; based on 70 ppb data completeness criteria

AQS ID	Monitor ID	ST	LADCO		U.S. EPA		2009-2013	
			3x3 avrg	3x3 max	3x3 avrg	3x3 max	avrg	max
361030002	Babylon	NY	**71.6**	**73.1**	**72.5**	**74.0**	83.3	85.0
90019003	Westport	CT	**71.4**	**74.2**	**72.7**	**75.6**	83.7	87.0
240251001	Edgewood	MD	**71.0**	**73.3**	**71.4**	**73.8**	90.0	93.0
360850067	Richmond	NY	70.9	**72.4**	**71.9**	**73.4**	81.3	83.0
551170006	Kohler Andrae Sheboygan	WI	70.5	**72.8**	70.8	**73.1**	84.3	87.0
90093002*	New Haven	CT	69.9	**72.6**	**71.2**	**73.9**	85.7	89.0
90013007	Stratford	CT	69.8	**73.7**	**71.2**	**75.2**	84.3	89.0
360810124	Queens	NY	69.2	**71.0**	70.1	**71.9**	70.0	71.0
90010017	Greenwich	CT	68.9	**71.2**	69.8	**72.1**	78.0	80.0
260050003	Holland	MI	68.8	**71.5**	69.0	**71.8**	80.3	83.0
261630019	7 Mile Detroit	MI	68.3	70.3	69.0	**71.0**	78.7	81.0
550790085	Bayside Milwaukee	WI	63.6	66.6	64.0	67.0	78.3	82.0

* The New Haven County, CT site 90093002 shut down in 2012 and was replaced by site 90099002; both monitors were sited at the same location.

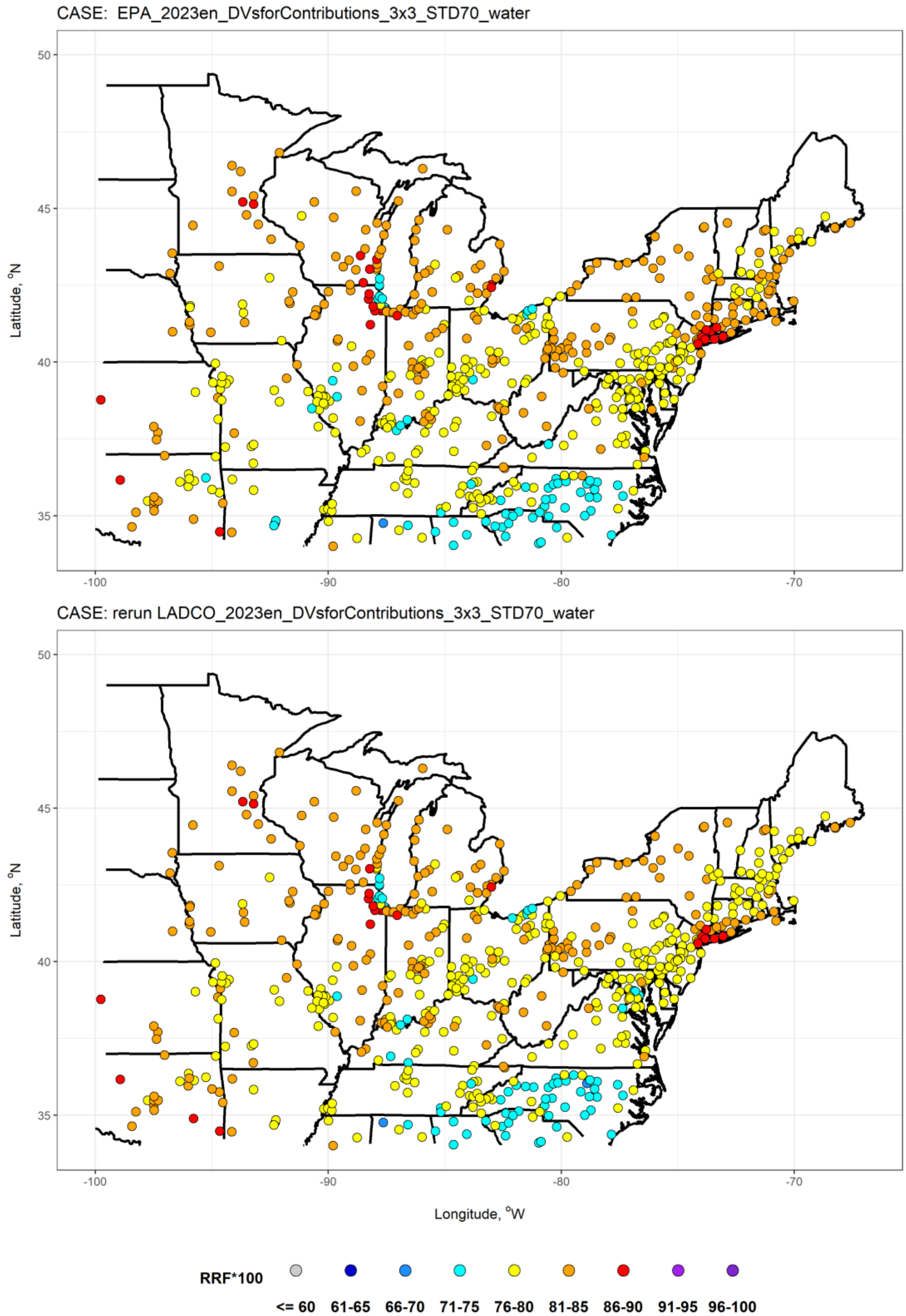

Figure 50. EPA (top) and LADCO (bottom) 2023 RRFs.

5.5.2 Impacts of Water Cells on Design Values

Confidence in the ability of photochemical models to accurately estimate O_3 over water is a concern with the use of the models for air quality planning. This concern recently prompted measurement campaigns in the Eastern U.S. to address the issue (see Lake Michigan Ozone Study and Long Island Sound Tropospheric Ozone Study). The meteorology and chemistry processes in model grid cells that are dominated by water (> 50% landuse area) are a challenge to simulate because the conventional technical formulations of the models are not optimized for water cells. Even with the introduction of new algorithms and modeling techniques to simulate the dynamical and chemical features of water cells, a lack of over-water observations hinders our ability to verify the accuracy of the models in simulating these conditions. In consideration that the models may not perform well in simulating water cells, U.S. EPA (2018) and others have presented alterative DV_{2023} calculation approaches that exclude water cells. Although not explicitly listed in Attachment A of the U.S. EPA's March 2018 memo on O_3 Transport Modeling as a flexibility to consider in developing a Good Neighbor SIP, the U.S. EPA used the exclusion of water cells in their own DV_{2023} calculations (US EPA, 2017a; US EPA, 2018). U.S. EPA implicitly endorses the exclusion of water cells when calculating DVs_{2023} in their most recent technical guidance for Good Neighbor SIPs (US EPA, 2018).

Exercising this flexibility does not require additional CAMx simulations. It is implemented through a postprocessing sequence per U.S. EPA (2018) in which model grid cells that are dominated by water (> 50% landuse area) are removed from the 3x3 matrix in the RRF and DV_{2023} calculation. One important modification to this process is to override the exclusion condition for cells that contain monitors; in other words, grid cells that contain monitors will be included in the 3x3 matrix regardless of the amount of water coverage in the cell. For the results presented here, LADCO used U.S. EPA postprocessing utilities and scripts that were developed to support their March 2018 memo.

Figure 51 through Figure 53, and Table 11 present the impacts of excluding water cells in the DV_{2023} calculations for the LADCO and U.S. EPA 2023 simulations. These figures compare the water/no-water DVs_{2023} and RRFs for the LADCO simulation, respectively. ***In general, excluding water cells in the attainment test calculation results in higher*** **DVs_{2023}** ***for the lakeshore monitors in the LADCO region.*** A few key downwind monitors (Edgewood, MD; Richmond, NY; New Haven, CT) have higher DVs_{2023} when water cells are included in the calculation.

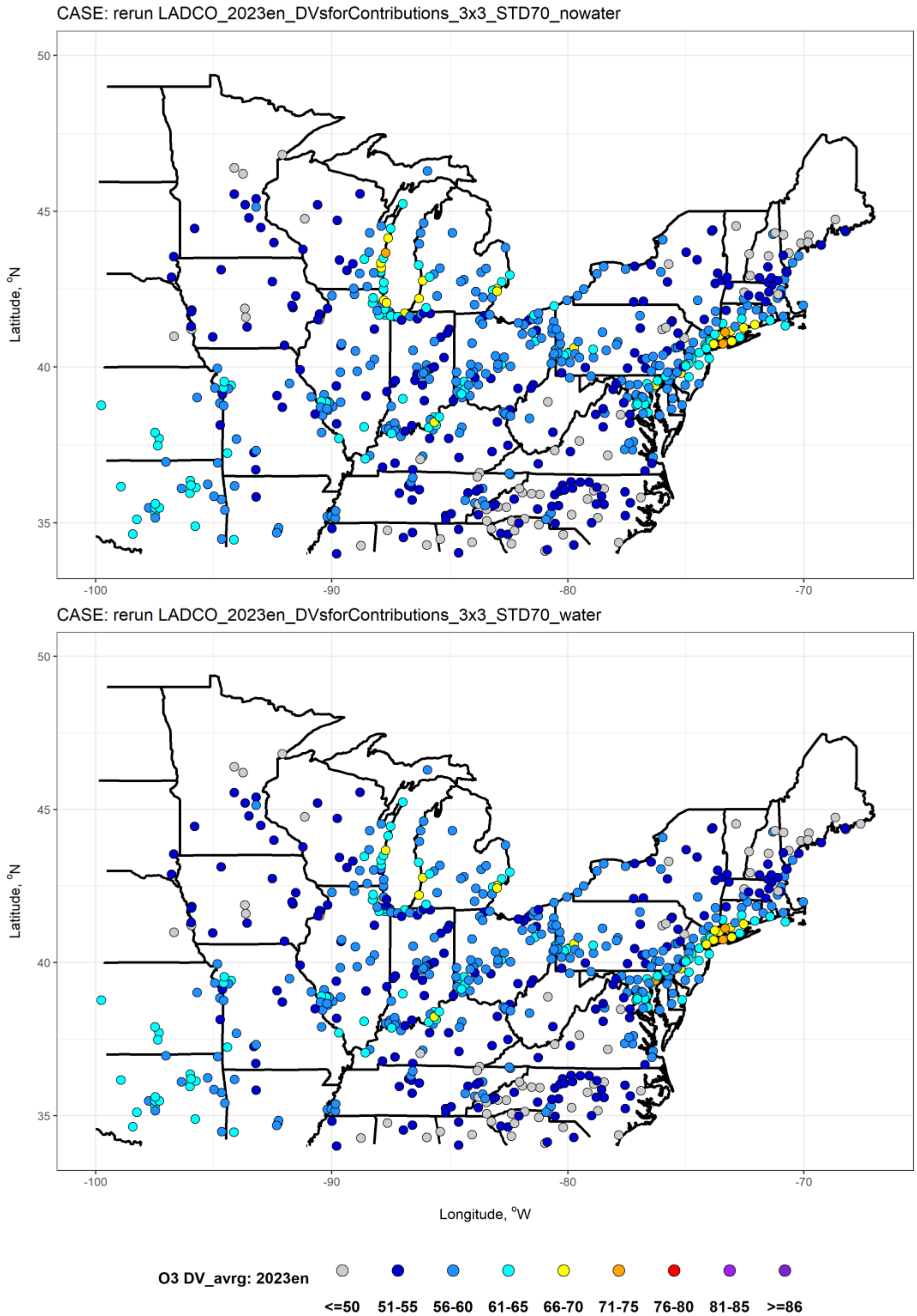

Figure 51. Ozone DVs2023 calculated with no WATER (top) and with WATER (bottom) for the LADCO 2023 CAMx simulation.

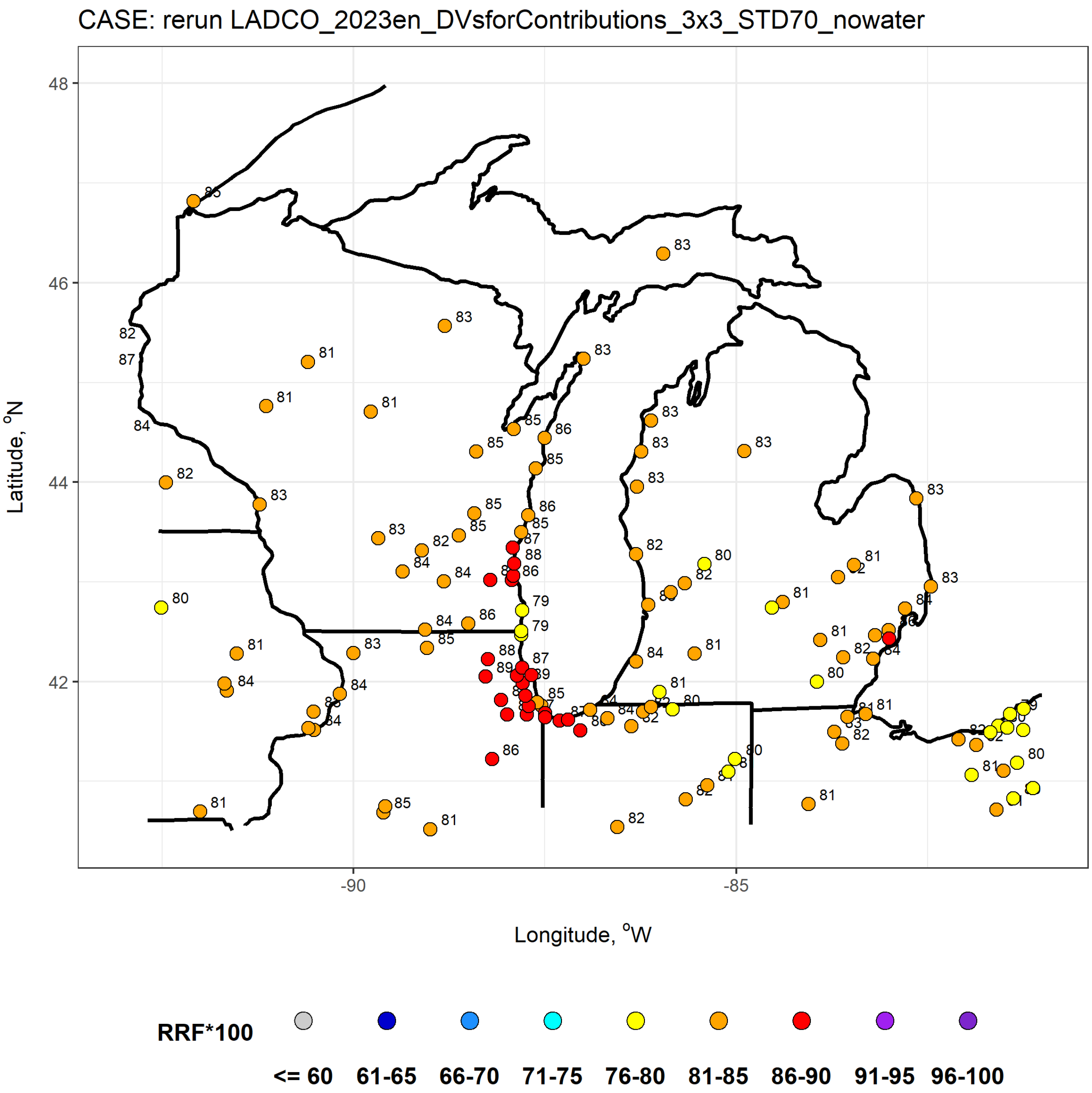

Figure 52. Ozone RRFs calculated with no WATER for the LADCO 2023 CAMx simulation.

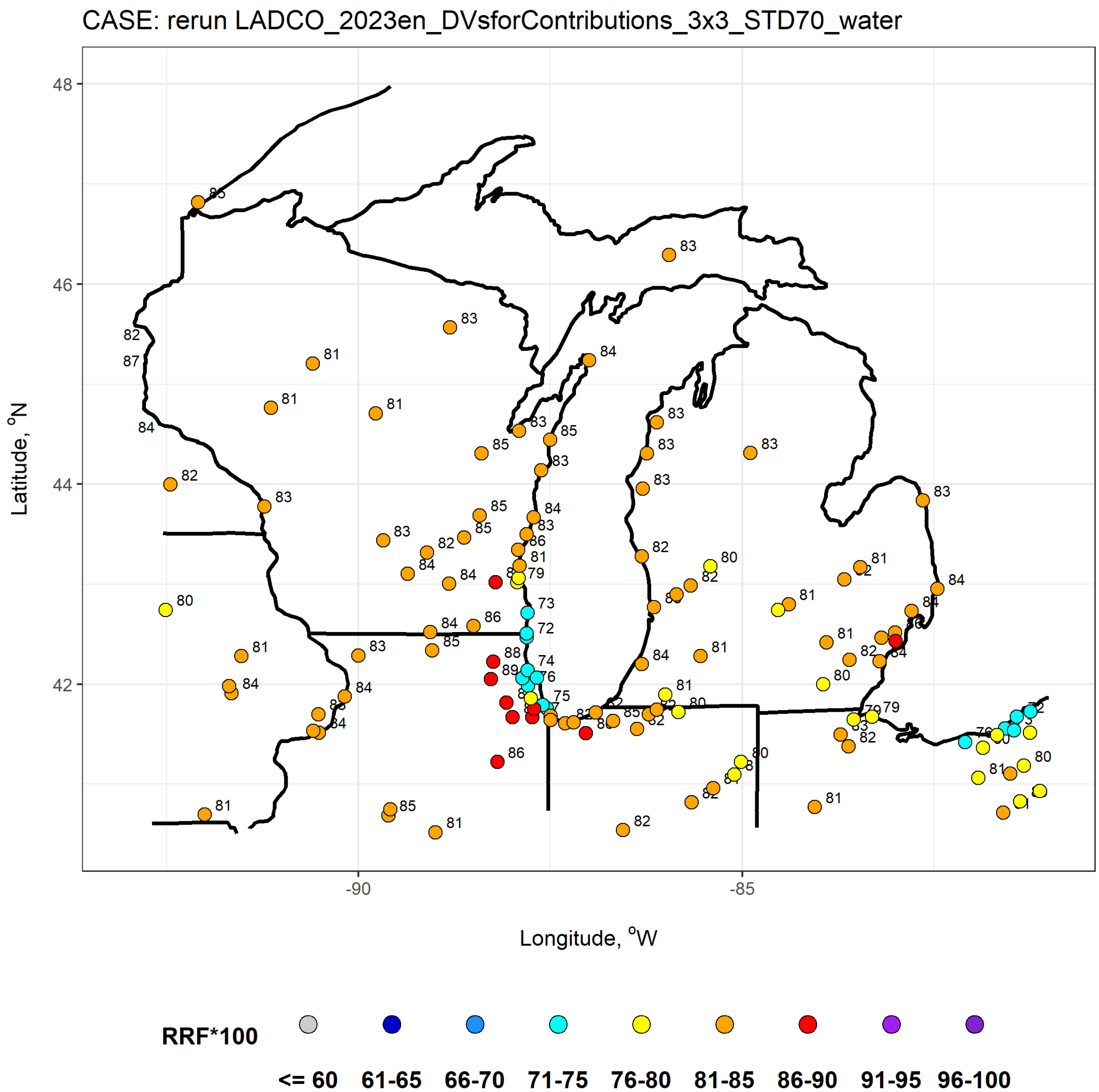

Figure 53. Ozone RRFs calculated with WATER for the LADCO 2023 CAMx simulation.

Table 11. LADCO and EPA 2023 O_3 DVs$_{2023}$ with and without water cells

AQS ID	Monitor ID	LADCO Water		LADCO No Water		U.S. EPA Water		U.S. EPA No Water	
		3x3 avrg	3x3 max	3x3 avrg	3x3 max	3x3 avrg	3x3 max	3x3 avrg	3x3 max
361030002	Babylon, NY	**71.6**	**73.1**	**72.9**	**74.4**	**72.5**	**74.0**	**74.0**	**75.5**
90019003	Westport, NY	**71.4**	**74.2**	**71.6**	**74.4**	**72.7**	**75.6**	**73.0**	**75.9**
240251001	Edgewood, MD	**71.0**	**73.3**	70.5	**72.8**	**71.4**	**73.8**	70.9	**73.3**
360850067	Richmond, NY	70.9	**72.4**	65.8	67.2	**71.9**	**73.4**	67.1	68.5
551170006	Kohler Andrae Sheboygan, WI	70.5	**72.8**	**72.3**	**74.6**	70.8	**73.1**	**72.8**	**75.1**
90093002*	New Haven, CT	69.9	**72.6**	68.4	**71.0**	**71.2**	**73.9**	69.9	**72.6**
90013007	Stratford, CT	69.8	**73.7**	69.3	**73.2**	**71.2**	**75.2**	**71.0**	**75.0**
360810124	Queens, NY	69.2	**71.0**	69.2	**71.0**	70.1	**71.9**	70.2	**72.0**
90010017	Greenwich, CT	68.9	**71.2**	67.7	70.0	69.8	**72.1**	68.9	**71.2**
260050003	Holland, MI	68.8	**71.5**	68.7	**71.5**	69.0	**71.8**	69.0	**71.7**
261630019	7 Mile Detroit, MI	68.3	70.3	68.3	70.3	69.0	**71.0**	69.0	**71.0**
550790085	Bayside Milwaukee, WI	63.6	66.6	69.1	**72.4**	65.4	67.0	**71.2**	**73.0**

* The New Haven County, CT site 90093002 shut down in 2012 and was replaced by site 90099002; both monitors were sited at the same location.

5.5.3 Model Bias Filtering

Under the Step 1 flexibilities for Good Neighbor SIP analyses in the U.S. EPA March 2018 memo, U.S. EPA says that states may "[c]onsider removal of certain data from modeling analysis for the purposes of projecting design values and calculating the contribution metric where data removal is based on model performance and technical analyses support the exclusion." Per this flexibility, for the monitors analyzed in this document LADCO filtered the days used for calculating RRFs and DVs$_{2023}$ with a normalized bias threshold of 15%. Instead of calculating RRFs at each monitor from the 10 highest concentration MDA8 modeled days in the base year, we used the 10 highest days with normalized biases $\leqq$ 15%. We applied the bias filtering to the attainment test calculations that include water cells.

Table 12 and Table 13 compare the LADCO and U.S. EPA O_3 DVs$_{2023}$ and RRFs with and without bias filtering. The change in the LADCO average DVs$_{2023}$ from applying the bias filtering ranged from a 2.4% decrease for the Westport monitor in Fairfield, CT (AIRS ID: 90019003) to a 6.4% increase for the Bayside Milwaukee, WI (AIRS ID: 550790085) monitor. Although the percentage differences from applying the bias filters are not exactly the same between the LADCO and EPA CAMx simulations, the impact to the U.S. EPA average DVs_{2023} was proportional to the LADCO DV_{2023} calculations. In other words, the bias filtering causes the DVs_{2023} at each monitor to change in the same direction and by nearly the same magnitude for both simulations. The bias filtering also had comparable impacts on both the average and maximum DVs_{2023}. ***Applying the bias filter increased the DVs_{2023} at the Kohler Andrae Sheboygan, WI; Holland, MI, and Bayside Milwaukee, WI monitors; the DV_{2023} at the 7 Mile monitor in Detroit, MI decreased with the application of the bias filter.*** It should be noted that the bias filtering has slightly more of an impact on the DVs_{2023} when water cells are included in the attainment test calculations. The results that demonstrate the impact of the bias filtering when water cells are excluded are not shown here.

Table 12. LADCO O_3 DVs_{2023} and RRFs with and without bias filtering

AQS ID	Monitor ID, ST	LADCO Water			Bias ≦ 15% Water		
		3x3 avrg	3x3 max	RRF	3x3 avrg	3x3 max	RRF
361030002	Babylon, NY	71.6	73.1	0.8606	72.3	73.8	0.8691
90019003	Westport, CT	71.4	74.2	0.8539	69.7	72.5	0.8336
240251001	Edgewood, MD	71.0	73.3	0.7889	71.4	73.7	0.7934
360850067	Richmond, NY	70.9	72.4	0.8728	71.9	73.4	0.8848
551170006	Kohler Andrae Sheboygan, WI	70.5	72.8	0.8370	72.3	74.6	0.8585
90093002*	New Haven, CT	69.9	72.6				
90013007	Stratford, CT	69.8	73.7	0.8286	68.6	72.4	0.8142
360810124	Queens, NY	69.2	71.0	0.8878	68.3	70.0	0.8759
90010017	Greenwich, CT	68.9	71.2	0.8589	68.8	71.1	0.8576
260050003	Holland, MI	68.8	71.5	0.8321	69.1	71.9	0.8365
261630019	7 Mile Detroit, MI	68.3	70.3	0.8689	67.1	69.1	0.8533
550790085	Bayside Milwaukee, WI	63.6	66.6	0.8133	67.7	70.9	0.8651

Table 13. EPA O_3 DVs_{2023} and RRFs with and without bias filtering

AQS ID	Monitor ID, ST	EPA Water			Bias ≦ 15% Water		
		3x3 avrg	3x3 max	RRF	3x3 avrg	3x3 max	RRF
361030002	Babylon, NY	72.5	74.0	0.8710	73.2	74.7	0.8795
90019003	Westport, CT	72.7	75.6	0.8690	70.7	73.5	0.8456
240251001	Edgewood, MD	71.4	73.8	0.7939	71.7	74.1	0.7968
360850067	Richmond, NY	71.9	73.4	0.8850	73.1	74.6	0.8992
551170006	Kohler Andrae Sheboygan, WI	70.8	73.1	0.8409	72.9	75.2	0.8651
90093002*	New Haven, CT	69.9	72.6				
90013007	Stratford, CT	71.2	75.2	0.8451	69.9	73.8	0.8293
360810124	Queens, NY	70.1	71.9	0.8998	69.1	70.8	0.8860
90010017	Greenwich, CT	69.8	72.1	0.8697	69.5	71.8	0.8657
260050003	Holland, MI	69.0	71.8	0.8349	69.3	72.1	0.8388
261630019	7 Mile Detroit, MI	69.0	71.0	0.8768	67.6	69.6	0.8593
550790085	Bayside Milwaukee, WI	64.0	67.0	0.8179	68.1	71.4	0.8710

* The New Haven County, CT site 90093002 shut down in 2012 and was replaced by site 90099002; we did not have a fused database to project the DVs at this monitor

6 Conclusions and Significant Findings

LADCO presents in this TSD a regional air quality modeling platform for quantifying and evaluating future year O_3 concentrations pursuant to Good Neighbor SIPs. By leveraging the U.S. EPA 2011-based "EN" modeling platform, LADCO was able to evaluate a series of O_3 NAAQS attainment test flexibilities in a relatively short (~3 month) timeframe. Given the complexities and significant effort involved in gathering data and modeling tools, and in validating a modeling system for use in regulatory applications, borrowing from an existing U.S. EPA modeling platform was the only way that LADCO could have completed this work in such a short period.

This TSD provides alternative technical approaches (i.e., flexibilities) for forecasting AQS monitor nonattainment and maintenance status in 2023. After establishing that the U.S. EPA 2011-based EN modeling platform is a valid tool for simulating regional O_3 concentrations, LADCO presented the results from different approaches for projecting future O_3 concentrations and for calculating DVs_{2023}. A summary of the significant findings from the LADCO modeling follows.

- Finding 1: Applying alternative projections of emissions from electricity generating units in the LADCO CAMx simulation resulted in different future year O_3 forecasts than EPA's 2023 EN modeling. LADCO's different O_3 forecasts changed the attainment test results and source-receptor culpability assessments for monitors in the Midwest and Northeast U.S.
- Finding 2: Using EGU projections from the ERTAC EGU version 2.7 model, LADCO predicted that three monitors in the Northeast and no monitors in the Midwest will be nonattainment for the 2015 O_3 NAAQS by 2023. The Kohler Andrae monitor in Sheboygan, WI and the Holland, MI monitors are the only two sites in the LADCO region that were forecast to be in maintenance of the NAAQS in 2023.
- Finding 3: All of the LADCO states, with the exception of MN and WI, were forecast to have CSAPR-significant linkages to maintenance monitors in the Northeast. Ohio was forecast to have the largest single contribution to a monitor outside of the LADCO region (2.83 ppbV at Edgewood, MD).

- Finding 4: In general, excluding water cells in the attainment test calculation results in higher DVs_{2023} for the lakeshore monitors in the LADCO region.
- Finding 5: Applying a bias filter to ensure that the attainment test calculation is based on model days in which model performance is within an acceptable range results in heterogeneous changes to the DVs_{2023}. Applying a 15% normalized bias filter increased the DVs_{2023} at the Kohler Andrae Sheboygan, WI, Holland, MI, and Bayside Milwaukee, WI monitors; the DV_{2023} at the 7 Mile monitor in Detroit, MI decreased with the application of the bias filter.

As with all regional air quality modeling applications, there are uncertainties in the model inputs and in the model formulation that produce biases in the results presented here. LADCO determined that as of the writing of this TSD the EPA "EN" modeling platform and the ERTAC EGU emissions were the best available data for forecasting air quality in 2023. LADCO plans to continue to work with the LADCO states to identify and evaluate additional flexibilities for quantifying interstate transport, defining maintenance, and demonstrating attainment of the NAAQS in future years.

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Appendix: Additional Materials

Table 14. APCA Source Regions

FIPS	APCA Region ID	NAME
N/A	1	Biogenic
17	2	Illinois
55	3	Wisconsin
18	4	Indiana
39	5	Ohio
26	6	Michigan
27	7	Minnesota
19	8	Iowa
29	9	Missouri
5	10	Arkansas
22	11	Louisiana
48	12	Texas
40	13	Oklahoma
20	14	Kansas
31	15	Nebraska
Multiple	16	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island
9	17	Connecticut
36	18	New York
34	19	New Jersey
42	20	Pennsylvania
10	21	Delaware
24	22	Maryland
	23	Washington DC
54	24	West Virginia
51	25	Virginia
Multiple	26	North Carolina, South Carolina, Tennessee, Georgia, Alabama, Mississippi, Florida
21	27	Kentucky
Multiple	28	Arizona, Colorado, Utah, Wyoming, Montana, North Dakota, South Dakota, Idaho, Washington, Oregon, California, Nevada
N/A	29	Canada/Mexico
N/A	30	Offshore
N/A	31	Tribal
N/A	32	Fire

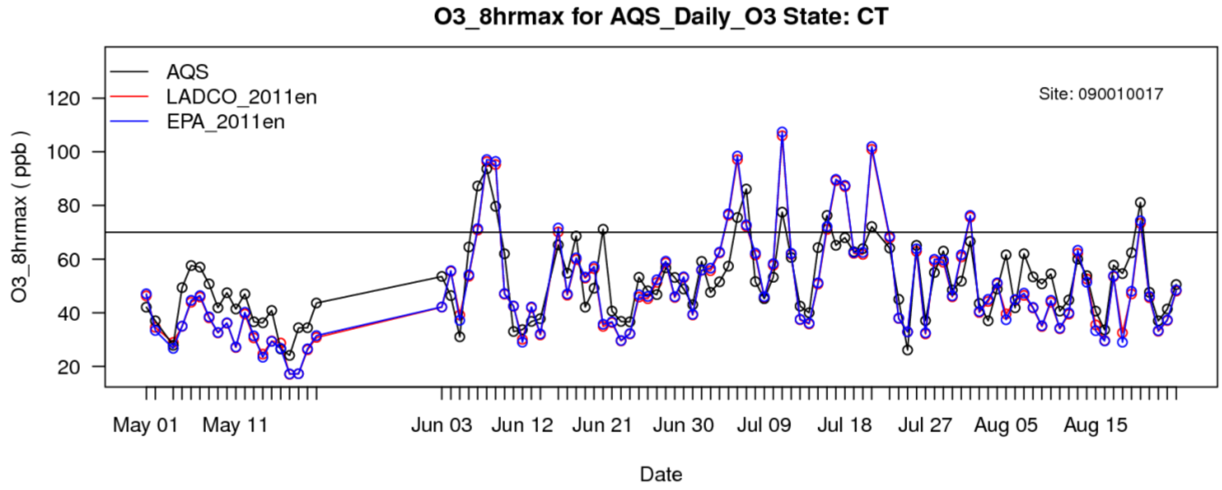

Figure 54. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 090010017 in Fairfield County, CT

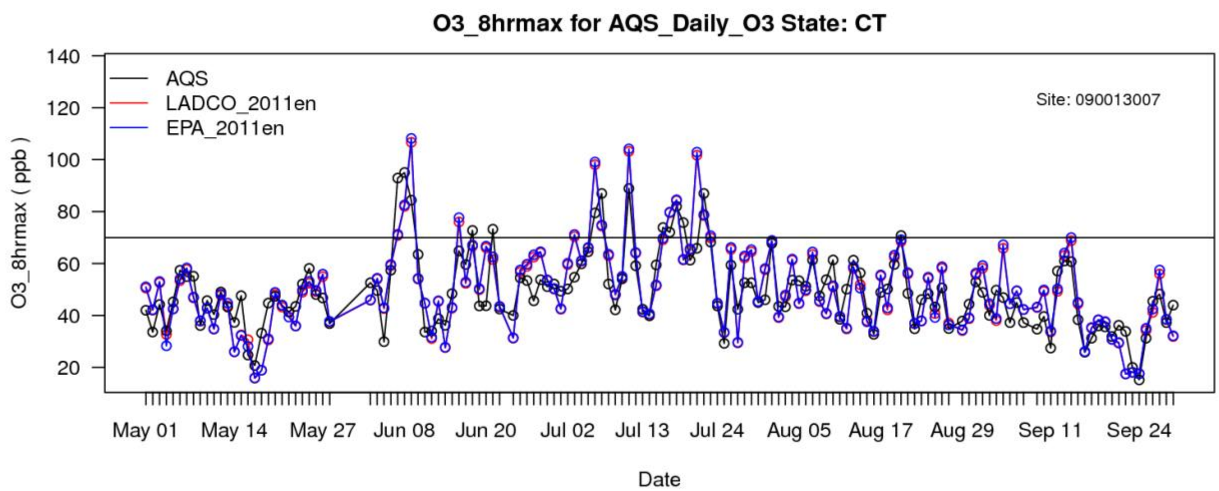

Figure 55. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 090013007 in Fairfield County, CT

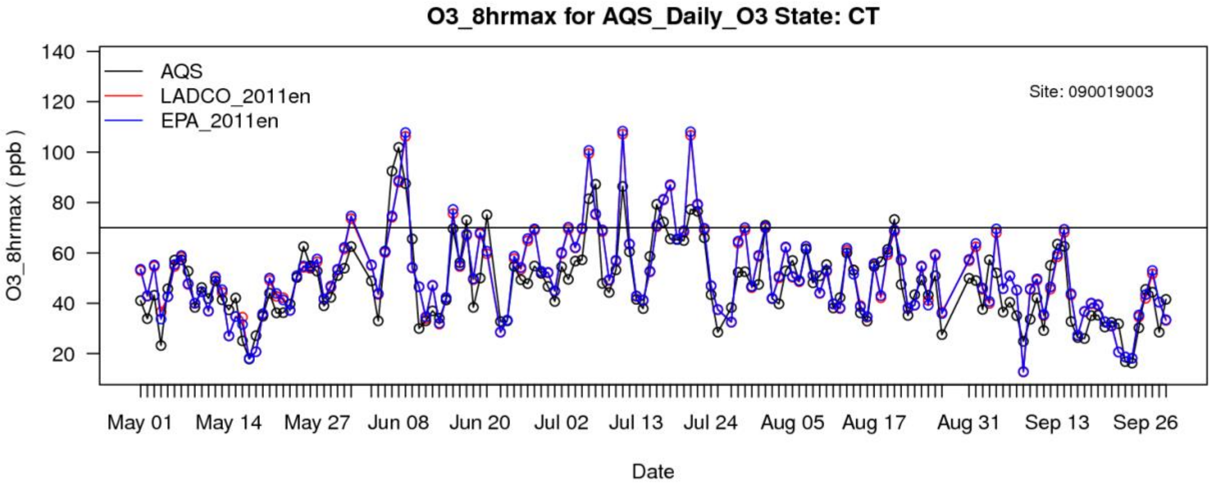

Figure 56. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 090019003 in Fairfield County, CT

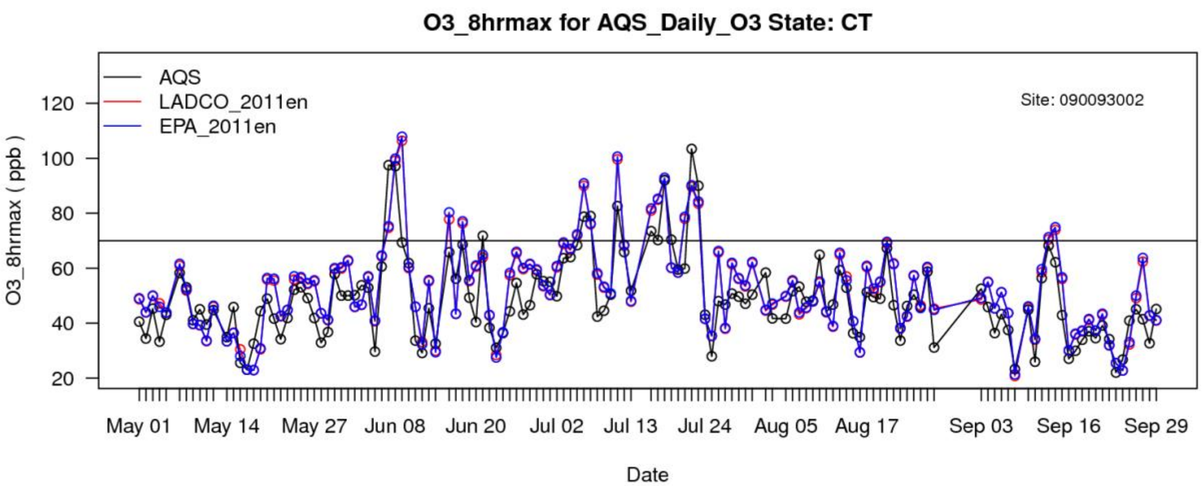

Figure 57. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 090093002 in New Haven County, CT

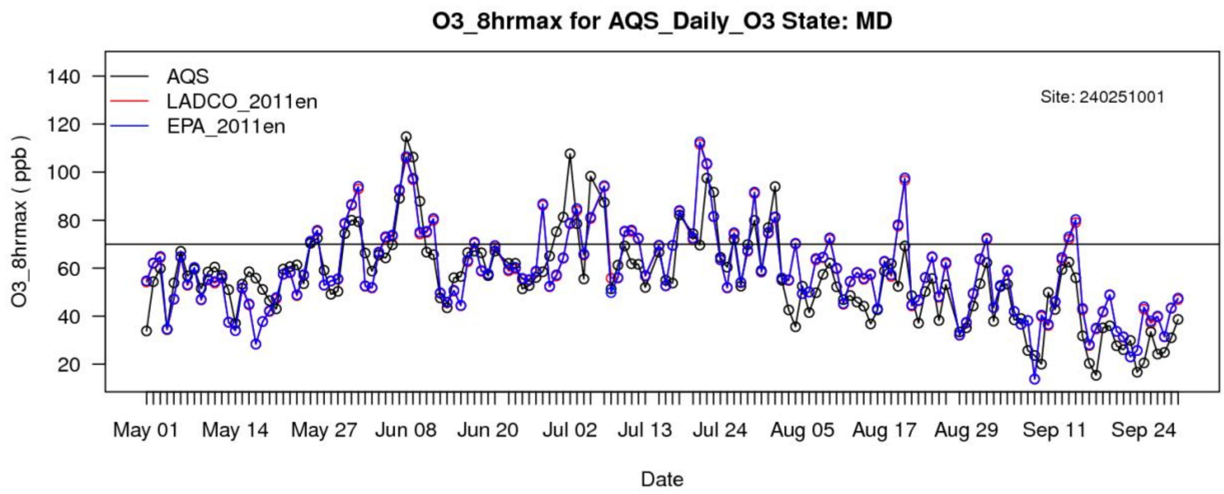

Figure 58. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 240251001 in Harford County, MD

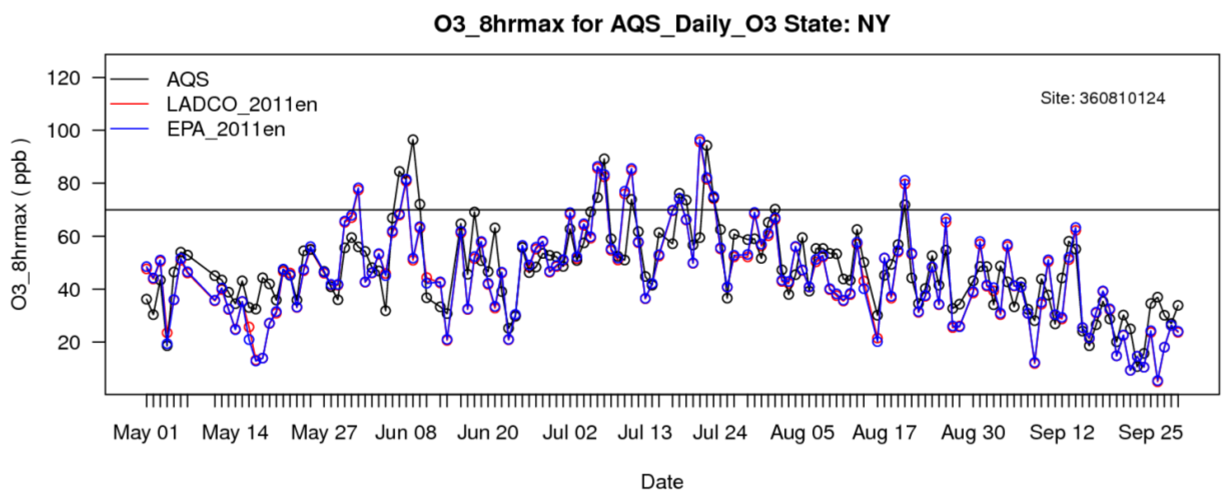

Figure 59. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 360810124 in Queens County, NY

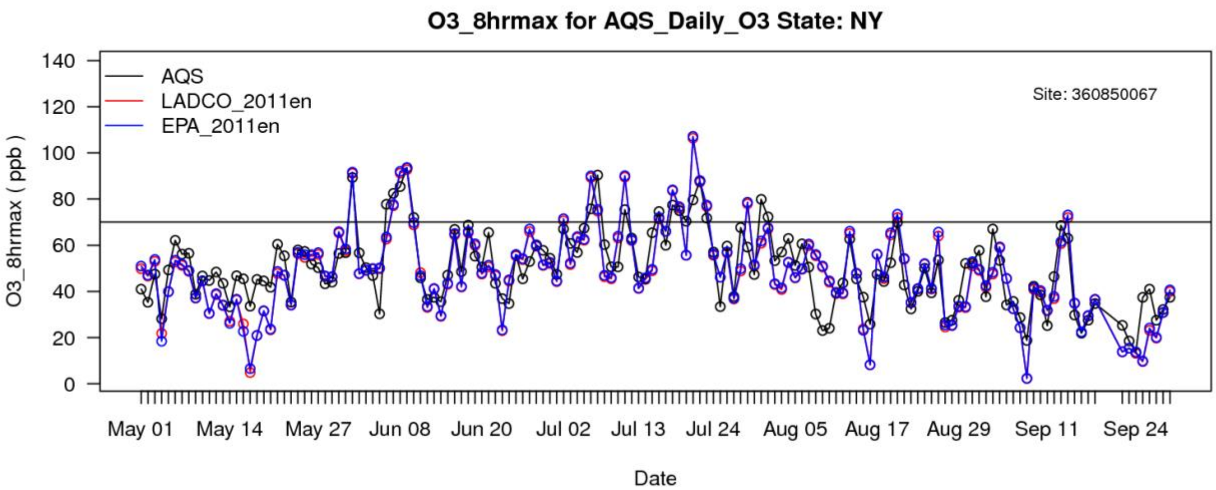

Figure 60. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 360850067 in Richmond County, NY

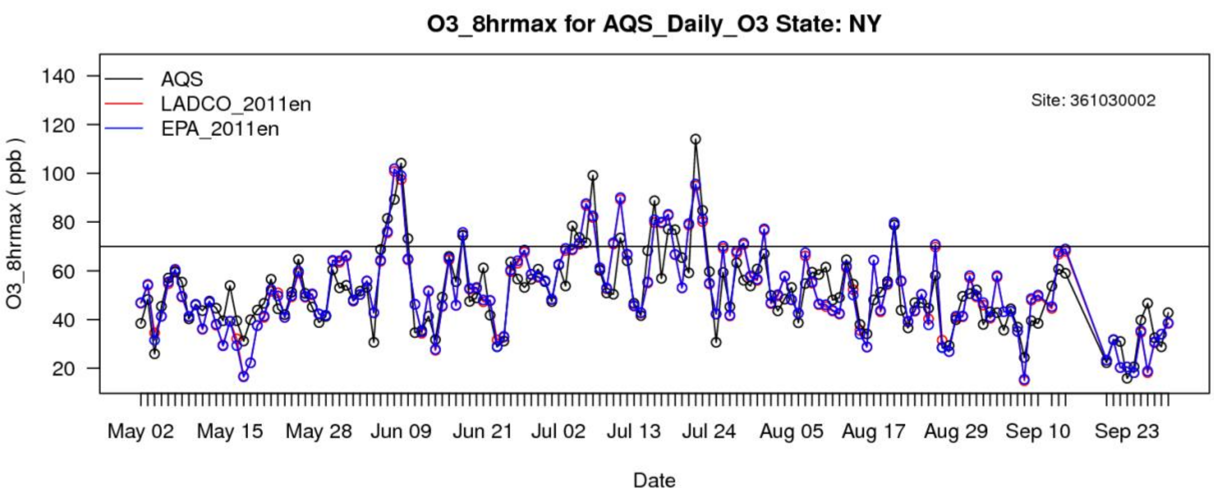

Figure 61. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 361030002 in Suffolk County, NY

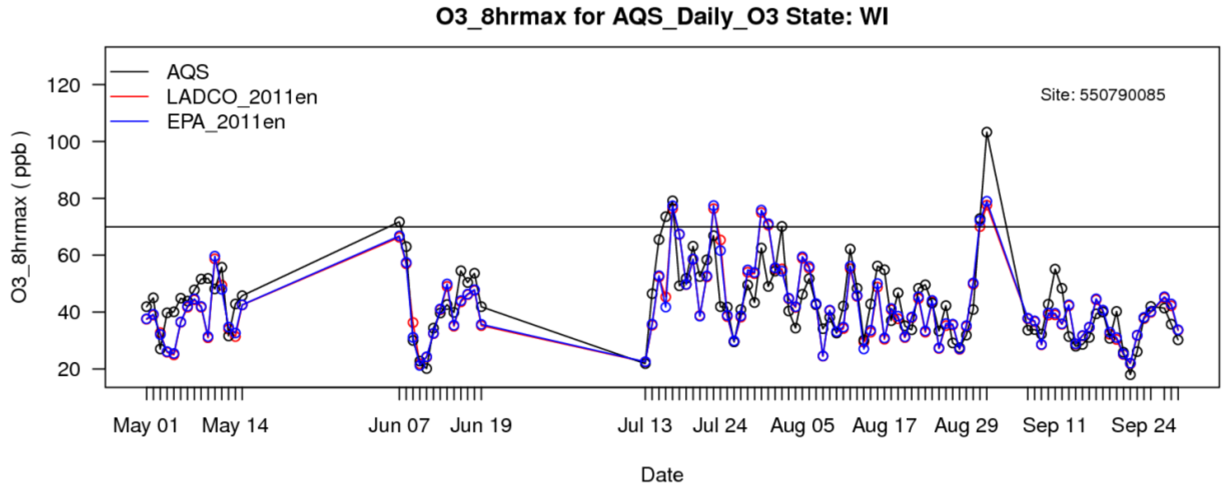

Figure 62. Timeseries of observed AQS, LADCO modeled, and EPA modeled summer season MDA8 O_3 at site 550790085 in Milwaukee County, WI